

WE CLAIM:

1. An embroidery sewing machine in which a workpiece cloth is moved so that an embroidery pattern is formed thereon, the  
5 embroidery sewing machine comprising:

a plurality of types of embroidery frames differing in a size and/or a shape from each other and holding the workpiece cloth, the embroidery frames being selectively used;

a carriage;

10 a moving mechanism moving the carriage independently in two directions perpendicular to each other;

a frame holder to which the embroidery frames are selectively attached, the frame holder including a holder body fixed to the carriage and a movable holder mounted to one of a plurality of  
15 positions corresponding to the respective types of the embroidery frames relative to the holder body so that the position of the movable holder is exchangeable;

a detector detecting a position of the movable holder relative to the holder body; and

20 a determining unit determining the type of the embroidery frame based on a result of detection by the detector.

2. An embroidery sewing machine according to claim 1, wherein the detector includes a detected body provided with a plurality  
25 of detected portions corresponding to the embroidery frames respectively and a detecting element detecting the detected portion of the detected body.

3. An embroidery sewing machine according to claim 2, wherein the detected body is mounted on the movable holder and the detecting element is mounted on either the holder body or the carriage.

5           4. An embroidery sewing machine according to claim 2, wherein the detected body is mounted on either the holder body or the carriage and the detecting element is mounted on the movable holder.

10           5. An embroidery sewing machine according to claim 3, wherein the detecting element is fixed to the carriage.

6. An embroidery sewing machine according to claim 2, wherein the detecting element includes a rotary potentiometer having a  
15   detecting member brought into contact with one of the detected portions of the detected body.

7. An embroidery sewing machine according to claim 2, wherein the detected portions of the detected body have heights or widths  
20   differing from each other along a direction in which the movable holder is moved respectively.

8. An embroidery sewing machine according to claim 2, wherein each detected portion of the detected body includes a tapered  
25   face having a height or a width changing therealong.

9. An embroidery sewing machine according to claim 2, wherein the holder body includes a guide mechanism guiding the movable

holder to one of the positions by sliding movement and a positioning mechanism positioning the movable holder at the one of the positions.

5           10. An embroidery sewing machine according to claim 9, wherein the holder body includes a fixing mechanism fixing the movable holder positioned by the positioning mechanism to the holder body.

10           11. An embroidery sewing machine according to claim 9, wherein the positions at which the movable holder is positioned by the positioning mechanism correspond to the detected portions of the detected body respectively.

15           12. An embroidery sewing machine according to claim 11, wherein the detected portions of the detected body have heights or widths differing from each other along a direction in which the movable holder is moved respectively.

20           13. An embroidery sewing machine according to claim 11, wherein each detected portion of the detected body includes a tapered face having a height or a width changing therealong.

            14. An embroidery sewing machine according to claim 1,  
25 wherein each embroidery frame has both sides opposite to each other, and the frame holder is formed generally into a C-shape and includes a body fixed to the carriage and extending in one direction, the body of the frame holder having both ends, and

two arms extending substantially perpendicularly from the ends of the body to support both sides of the embroidery frame respectively, and wherein the holder body of the frame holder includes said body and either one of said arms, and the movable  
5 holder includes the other arm mounted thereon so as to be displaceable relative to the body of the frame holder.

15. An embroidery sewing machine according to claim 1,  
wherein each embroidery frame has both sides opposite to each  
10 other, and the frame holder is formed generally into a C-shape and includes a body fixed to the carriage and extending in one direction, the body of the frame holder having both ends, and two arms extending substantially perpendicularly from the ends of the body to support both sides of the embroidery frame  
15 respectively, and wherein the holder body of the frame holder includes said body and the movable holder includes said arms mounted thereon so as to be displaceable relative to the body of the frame holder.